

IN THE SPECIFICATION

In the Abstract, please replace with the following paragraph:

B¹
--The invention discloses a relative structure placement of datapath of cell instances in a column structure, a row structure, or an array structure. To encourage placement of a desirable structure, pseudo cells, pseudo pins, and pseudo nets are selected to be placed at certain locations with respect to real cell instances. The end result produces a cluster of real cell instances that form a desirable structure while minimizing the length of nets. The invention further discloses a non-uniform partitioning of a density map for calculating a force update vector. The partitioning is taken ~~[[taking]]~~ over a region A to compute Riemann sum approximations of a function F over the region A. A force update vector is calculated for a given cell instance within the region A where neighboring cell instances have an exponentially larger grid size as cell instances extend further away from the given cell instance.--

On Page 2, lines 9-14, please replace with the following paragraph:

B²
--Two general categories of placement methods are used, the first one random placement and the second one is structural placement. For random placement, cells are connected by list of nets. The objective of placement is to minimize a cost function that relates ~~[[are related]]~~ to total sum of net length with fixed constraints of placement area, routability, and timing. Several conventional placement algorithms relating to this type of placement method have been disclosed.--

On Page 3, lines 8-15, please replace with the following paragraph:

B3

--The invention discloses a relative placement of datapath elements by keeping the relativity [[relativity]] of cell instances in a datapath group without rigid alignments between cells. In one embodiment, to encourage placement of a desirable structure, pseudo cells, pseudo pins, and pseudo nets are selected to be placed at certain locations with respect to real cell instances. The end result produces a cluster of real cell instances that form a desirable structure while minimizing the length of nets. The invention therefore achieves objectives of minimizing the sum of net lengths while encouraging cells instances to form in a desirable structure, such as a column structure, a row structure, or a square structure. --

On Page 3, lines ^{16 21} 8-15, please replace with the following paragraph:

B4

--In a further aspect of the invention, a non-uniform partitioning of a density map for calculating a force update vector is disclosed. The partitioning is taken [[taking]] over a region A to compute Riemann sum approximations of a function F over the region A. A force update vector is calculated for a given cell instance within the region A where neighboring cell instances have an exponentially larger grid size as cell instances extend further away from the given cell instance.--